



# UNITED STATES PATENT AND TRADEMARK OFFICE

AD  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,214	10/09/2003	Michael K. Singman-Aste	17646-127001	8084
26231	7590	12/08/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			MAHMOUDI, HASSAN	
		ART UNIT	PAPER NUMBER	
		2165		

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/682,214	SINGMAN-ASTE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tony Mahmoudi	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 September 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,8,10-14,17,19-23 and 26 is/are rejected.
- 7) Claim(s) 6,7,9,15,16,18,24,25 and 27 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 October 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Remarks***

1. In response to communications filed on 28-September-2006, independent claim 28 is cancelled and claims 1, 7, 9-20, 22-25, and 27 are amended per applicant's request. Therefore, claims 1-27 are presently pending in the application, of which, claims 1, 10 and 19 are presented in independent form.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4-6, 13-15, and 22-24 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The above claims recite the limitation, "instances of substantially identical value". The term "identical" means an exact match or an absolutely the same value; "exactly equal and alike", while the term "substantial" signifies "considerable amount"; "degree or extent" of, in this case, equality in value. Recitation of "substantially identical value" renders the claim indefinite because the term "substantial" conflicts with the term "identical" for value comparisons. In contrast, "substantially similar value" or "substantially close in value"

Art Unit: 2165

would be considered distinct, provided that the instant application provides teachings for measuring and for a degree of measurement for considering the “closeness” or “similarity” level of the “one or more instances of value”, as recited in the above claims.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 10-12, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Grace et al (U.S. Publication No. 2002/0049570 A1, hereinafter referred to as Grace.)

As to claim 1, Grace teaches a method for automatically determining at least one modal value (see paragraphs 1, 151, and 153) of non-numeric data (see paragraphs 49-52, and see paragraph 58), the method comprising:

selecting a data subset from a dataset, the data subset comprising at least a portion of the dataset (see paragraphs 84, 92, 95, and 160) and including at least one non-numeric value (see paragraphs 49-52, and see paragraph 58);

automatically determining at least one modal value based on the selected data subset (see paragraph 135, where “subset of overlapping data is “automatically” produced; and see paragraphs 151, and 153, where “determining mode value” is taught); and

outputting the at least one modal value (see paragraphs 119-120, 124 and see paragraphs 189-192.)

As to claims 2, 11 and 20, Grace teaches wherein selecting the data subset from the dataset comprises querying a database (see paragraphs 14-15, where “indexing” the data sets provides for database queries; and see paragraph 59.)

As to claims 3, 12, and 21, Grace teaches each value of the data subset comprising one of the following data types:

float; integer (see paragraph 121); currency; date; decimal; or string (see paragraph 50.)

As to claim 10, Grace teaches a computer readable medium (see paragraph 62) containing computer executable instructions (see paragraphs 60-61) for automatically determining at least one modal value (see paragraphs 1, 151, and 153) of non-numeric data (see paragraphs 49-52, and see paragraph 58), the computer executable instructions operable when executed to:

select a data subset from a dataset, the data subset comprising at least a portion of the dataset (see paragraphs 84, 92, 95, and 160) and including at least one non-numeric value (see paragraphs 49-52, and see paragraph 58);

automatically determine at least one modal value based on the selected data subset (see paragraph 135, where “subset of overlapping data is “automatically” produced; and see paragraphs 151, and 153, where “determining mode value” is taught); and

output the at least one modal value (see paragraphs 119-120, 124 and see paragraphs 189-192.)

As to claim 19, Grace teaches system (see paragraph 49) for automatically determining at least one modal value (see paragraphs 1, 151, and 153) of non-numeric data (see paragraphs 49-52, and see paragraph 58) comprises:

memory operable to store a data set (see paragraphs 59 and 141), the data set comprising a plurality of data objects and each data object comprising a data type and a value (see paragraphs 14-15); and

one or more processors (see figure 1; and see paragraphs 16, 21, and 35) operable to: select a data subset from the dataset, the data subset comprising at least a portion of the plurality of data objects (see paragraphs 84, 92, 95, and 160) and including at least one non-numeric data object (see paragraphs 49-52, and see paragraph 58);

automatically determine at least one modal value based on the selected data subset (see paragraph 135, where “subset of overlapping data is “automatically” produced; and see paragraphs 151, and 153, where “determining mode value” is taught); and

output the at least one modal value (see paragraphs 119-120, 124 and see paragraphs 189-192.)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-5, 8, 13-14, 17, 22-23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grace (U.S. Patent No. 5,280,547.)

As to claims 4, 13, and 22, Grace teaches wherein determining at least one modal value based on the selected data subset comprises:

sorting the selected data subset by value (see paragraphs 141 and 143);  
processing the sorted data subset to identify one or more modal value (see paragraph 84, where “modal value” is read on “multiple overlapping subsets of data points are selected from the first set of data points”; and see paragraph 144, where data subsets are processed”);  
and

determining at least one modal value based, at least in part, on the one or more modal value (see paragraphs 151, and 153, where “determining mode value” is taught.)

Grace does not teach “modal groups, each modal group comprising one or more instances of a substantially identical value.”

Mahoney teaches dense aggregative hierarchical techniques for data analysis (see column 3, lines 24-37), in which he teaches “modal groups, each modal group comprising one or more instances of a substantially identical value” (see column 33, lines 17-46, where “modal groups” is read on multiple “mode field values”, and where “one or more instances of a substantially identical value” is read on the mode values being “sufficiently similar” [the applicant is kindly directed to the rejection made under the second paragraph of 35 U.S.C.

Art Unit: 2165

112, regarding the “indefinite” nature of the term “substantially identical”, as used in the instant application (sections 3-4 of this Office Action]).)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Grace by the teaching of Mahoney, because including “modal groups, each modal group comprising one or more instances of a substantially identical value”, would enable the system to identify data sets with modes of nearly the same values, wherein subsets of data which have substantially the same modal values (related data) can be grouped together so that they can later be retrieved together. Mahoney uses this technique to “analyze a body of data items to obtain information about attributes of groups of the data items”, as taught in column 2, lines 20-29.

As to claims 5, 14, and 23, Grace as modified, still does not teach determining a modal count for each modal group, each modal count comprising the number of instances of the substantially identical value in the associated modal group.

Mahoney further teaches determining a modal count for each modal group (see column 8, lines 4-24), each modal count comprising the number of instances of the substantially identical value in the associated modal group (see column 33, lines 17-46.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Grace as modified, by the further teaching of Mahoney, because determining a modal count for each modal group, would enable the system to establish a rating/ranking mechanism to identify the mode fields with the highest number of occurrences (total number of sufficiently similar mode values) as well as a

plurality of modes with different values. Mahoney teaches a technique “implemented by producing a hierarchy of prominent values in which each prominent value is selected from a set of prominent values at the next lower level of the hierarchy. Each prominent value at the next lower level has a count roughly indicating its frequency up to that level in the hierarchy. The prominent value at the higher level is the more frequent of the prominent values at the next lower level, as indicated by the counts” (see column 8, lines 12-24.)

As to claims 8, 17, and 26, Grace as modified, teaches one of the modal groups comprising at least one lowercase string value and at least one mixed-case string value (see Mahoney, column 25, lines 11-51, where “modal groups” is read on “tl, tr, bl and br quadrants”, and the “lower-case string value and mixed-case string value” is read on “edge-pair strings”, as depicted in table I.)

#### *Allowable Subject Matter*

8. Claim 6-7, 9, 15-16, 18, 24-25, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form *including all of the limitations of the base claim and any intervening claims.*

#### *Response to Arguments*

9. Applicant's arguments filed on 28-September-2006 with respect to the rejected claims in view of the cited references have been fully considered.

Applicant's arguments regarding the rejection under 35 U.S.C. 112 for the recitation of "substantially identical" has been considered but the arguments are not deemed persuasive. The Examiner does not agree that the usage of the term, without providing a degree of measurement, would enable a person with ordinary skill in the art to determine what is considered "identical enough". The rejection is therefore maintained by the Examiner.

Applicant's amendments overcomes the previous rejection under 35 U.S.C. 101. The Applicant's arguments made for this rejection is considered moot in view of the Examiner's withdrawal of the 101 rejection.

In response to the applicant's arguments regarding the 102 rejections, that Grace does not disclose at least the feature of "selecting a data subset from a dataset, the data subset comprising ... at least one non-numeric value." The Examiner respectfully disagrees. Grace teaches gene-mapping techniques for determining a nucleotide base sequence, without indicating that the sequence contain all-numeric values. The rejected claim of the instant Application recites, "selecting a data subset comprising at least a portion of the dataset and including at least one non-numerical value". The "at least one non-numerical value" is evident in the mappings of Grace. Further, the claim's preamble recites, "determining at least one modal value of non-numeric data". The element being determined in the claim is the modal value and not the non-numeric data itself.

In view of the 103 rejections, the Applicant argues that, "the Examiner has failed to establish a *prima facie* case of obviousness, for at least the reason that the references relied

upon by the examiner, either alone or in combination with one another, do not teach or suggest all the features of the claimed invention”, and that, more particularly, Grace does not teach or suggest at least the feature of, “selecting a data subset from a dataset, the data subset comprising … at least one non-numeric value.” The Examiner respectfully disagrees, in view of the remarks and discussions presented above in view of such teaching by Grace.

*Conclusion*

**10. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**11.** Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (571) 272-4078. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

Art Unit: 2165

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin, can be reached at (571) 272-4146.

tm

October 30, 2006



JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100